

BROOKHAVEN NATIONAL LABORATORY NATIONAL SYNCHROTRON LIGHT SOURCE		Number: LS-SDL-0027	Revision: A
		Effective: 10-10-02	Page 1 of 5
Subject: SDL PRE-ENGINEERED LIFT SDL 505.05 NORTH SIDE PLATES			
Prepared By: R. Kiss	Reviewed By: B. Singh	Approved By: X. Wang	

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SDL PRE-ENGINEERED LIFT SDL-505.05 NORTH SIDE PLATES

Number: LS-SDL-0027	Revision: A	Effective: 10-10-02	Page 2 of 5

SDL Pre-Engineered Lift SDL 505.04-0001 North Side Plates

1. PURPOSE

This procedure covers the removal and installation of the NORTH SIDE lead shield plates designated on NSLS SDL drawing number SDL-505.05-049 for the SDL beam line.

Plate Numbers: 505.05-052

: 505.05-074

2. REFERENCES

- 2.1. ES&H 1.5.1 Lockout/Tagout Requirements
- 2.2. ES&H 1.6.0 Material Handling: Equipment and Procedures
- 2.3. ES&H 1.6.1 Material Handling: Operator Training and Qualifications
- 2.4. ES&H 1.6.2 Lifting Safety
- 2.5. DOE-STD-1090-2001 Hoisting and Rigging
- 2.6. Drawing No. SDL-505.05-049 Source Development Lab NISUS Shielding Lead Casting
- 2.7. Drawing No. SDL-505.05-74 side plate F

3. PRE-REQUISITIES

- 3.1. The beam line shall be shut down and LOTO applied and proper authorization obtained prior to starting this lift.
- 3.2. Barricades shall be erected to prevent un-authorized personnel from entering the area.
- 3.3. All personnel shall wear proper Personnel Protective Equipment (Hard Hat, Safety Shoes, Gloves).
- 3.4. All local hazards shall be located and identified.
- 3.5. A Critical Lift Review Form shall be current and approved by the BNL Lifting Safety Committee.
- 3.6. No work shall be performed on the shield plates while suspended from the crane.
- 3.7. A minimum of two (2) people, Crane Operator and PIC, shall be present to complete this procedure.
- 3.8. All personnel, authorized to be in the area, shall know and be capable of demonstrating the Emergency Stop Signal.

Number: LS-SDL-0027	Revision: A	Effective: 10-10-02	Page 3 of 5

4. ROLES AND RESPONSIBILITIES

- 4.1. A Person(s) In Charge (PIC) shall be designated by the NSLS. PICs shall be qualified as per ES&H 1.6.1 Material Handling. A PIC shall be present during any lift. The PIC shall not be the Crane Operator.
- 4.2. One person shall be designated as the crane operator. He shall have a current SAC card for Crane Operator (Q010 and Q010A) and have completed the Basic Rigging Course (GST155). Only this person will operate the crane during this lift.
- 4.3. One person shall be designated as the PIC. This person shall have completed the basic rigging course GST-155. Only this person will give signals to the crane operator.

NOTE: THE CRANE OPERATOR SHALL OBEY A STOP SIGNAL FROM ANY PERSON.

5. INSPECTIONS

- 5.1. The crane shall have a current annual inspection by the BNL Hoisting and Rigging Inspector.
- 5.2. All slings shall have a current annual inspection by the BNL Hoisting and Rigging Inspector.
- 5.3. A daily Overhead Crane/Hoist Inspection Checklist shall be completed at the beginning of each shift.
- 5.4. All rigging (eyebolts, shackles, slings auxiliary chain fall, auxiliary trolley, etc.) shall be inspected for signs of wear at the beginning of each shift.
- 5.5. All threaded lifting holes shall be inspected for clean and proper threads.

6. EQUIPMENT:

- 6.1 Overhead crane 729CRNE-001.
- 6.2 Continuous Slings- minimum 10' adequate capacity
- 6.3 Double leg bridle sling – minimum 3', adequate capacity
- 6.4 Eye bolts-adequate capacity
- 6.5 Shackles-adequate capacity
- 6.6 Auxiliary Trolley- 2 ton minimum
- 6.7 Auxiliary Chain Hoist- 2 ton minimum

Number: LS-SDL-0027	Revision: A	Effective: 10-10-02	Page 4 of 5

7. REMOVAL AND INSTALLATION PROCEDURE OF PLATE NUMBER 505.05-052

CAUTION: The area over and around the beam line has many obstructions. Use extreme caution when working in this area.

- 7.1 Remove the top and south side plates as per procedure LS-SDL-0025 SDL Pre-engineered Lift SDL-505.05-049 TOP and SOUTH SIDE PLATES as needed.
- 7.2 Position the crane trolley at the south end of the bridge rails. It shall stay at this location for the duration of NORTH SIDE PLATE removals.
- 7.3 Install an Auxiliary trolley and chain fall onto a bridge girder. Make sure that all fasteners are properly installed and the chain fall hook mouse is properly seated.
- 7.4 Install a double leg bridle sling onto the chain fall.
- 7.5 Position the overhead crane with the auxiliary trolley and chain hoist over the shield plate that is to be removed.
- 7.6 Inspect the threaded holes in the shield plate to ensure that the eyebolts will engage properly.
- 7.7 Install the eyebolts into the shield plate.
- 7.8 Connect the slings to the eyebolts in the shield plate.
- 7.9 Take up the slack in the rigging. Check all of the rigging for proper alignment and adjust if necessary.
- 7.10 Remove all mounting hardware holding the shield plate in place.
- 7.11 Lift the shield plate high enough to clear the beam line.
- 7.12 Move the shield plate south and lower onto the floor.
- 7.13 Disconnect the rigging from the shield plate.
- 7.14 Remove the rigging from the chain fall. Inspect the rigging and return to its storage locker.
- 7.15 Remove the chain fall from the auxiliary trolley and the trolley from the crane bridge rail. Inspect each unit and return to its storage locker.
- 7.16 Return the overhead crane and trolley to normal service.
- 7.17 Install plate number 505.05-052 by reversing steps 7.1 through 7.16.

Number: LS-SDL-0027	Revision: A	Effective: 10-10-02	Page 5 of 5

8. REMOVAL AND INSTALLATION OF PLATE NUMBER 505.05-074

CAUTION: The area over and around the beam line has many obstructions. Use extreme caution when working in this area.

- 8.1 Remove the top and south side plates as per procedure LS_SDL-0025 SDL Pre-engineered Lift SDL-505.05-049 TOP and SOUTH SIDE PLATES as needed.
- 8.2 Position the crane trolley at the south end of the bridge rails. It shall stay at this location for the duration of NORTH SIDE PLATE removals.
- 8.3 Install an auxiliary trolley and chain fall onto a bridge girder. Make sure that all fasteners are properly installed and the hook mouse is properly seated.
- 8.4 At the indicated lift points on the shield plate, install two 10' continuous slings in a choker hitch.
- 8.5 Position the crane and chain fall over the indicated center of gravity of the shield plate.
- 8.6 Connect the slings to the auxiliary chain fall.
- 8.7 Take up the slack in the rigging. Check all of the rigging for proper alignment and adjust if necessary.
- 8.8 Remove all mounting hardware holding the shield plate in place.
- 8.9 Lift the shield plate high enough to clear the beam line.
- 8.10 Move the shield plate south and lower onto the floor.
- 8.11 Disconnect the rigging from the shield plate.
- 8.12 Remove the rigging from the chain fall. Inspect the rigging and return to its storage locker.
- 8.13 Remove the chain fall from the auxiliary trolley and the auxiliary trolley from the crane bridge rail. Inspect each unit and return to its storage locker.
- 8.14 Return the overhead crane and trolley to normal service.
- 8.15 Install plate number 505.05-074 by reversing steps 8.1 through 8.14.

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